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ABSTRACT

Three areas of quality assessment in higher education are examined: students, faculty, and library resources. Types of student data that institutional researchers should address include: entrance tests scores, retention rate, student outcomes, location and recruitment of graduates, results of licensing examinations, scholarship recipients, and student activities and national recognition. In promoting the quality of an institution, factors to consider include: faculty awards of fellowships, number of faculty with advanced degrees, years of teaching experience, full-time faculty, scholarly activity, accomplishments of students, and student evaluations. The Association of College and Research Libraries Standards for College Libraries provide for the evaluation of collection adequacy, as well as for staff and facility assessment. Additionally, qualitative standards for measuring library resources are also being used. It is concluded that institutional research (IR) should view the assessment of institutional quality as a priority management task. Criteria and data profiles that answer questions of both internal and external constituencies should be developed by IR offices. (SW)

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MEASUREMENTS OF QUALITY IN HIGHER EDUCATION:

The Role of Institutional Research

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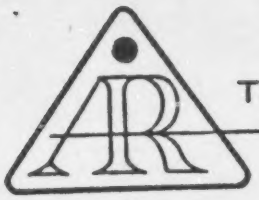

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

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D. R. Coleman, Chairman
Forum Publication
Advisory Committee

MEASUREMENTS OF QUALITY IN HIGHER EDUCATION

FACT OR FICTION?

Introduction

Quality determinants in higher education have been used to evaluate the effectiveness of educational programs in meeting set goals and to determine comparative academic advantage relative to other programs. However, quality is a subjective measure that has attempted to be objectively measured using a number of criteria. The comparative advantage of quality programs is difficult to measure because of the requirements of different audiences, i.e., prospective students, granting agencies, accrediting groups, etc. and because of the many subjective criteria that are used. According to Astin and Soloman (1979) "there exists in higher education a kind of folklore regarding the 'best' institutions" (p. 50). This folklore is certainly based upon subjective assessments as much as objective assessments.

As former HEW Secretary David Mathews (1978) expressed so succinctly, "it is not very 'excellent' to become an advocate for excellence and not know what the term means." Since quality has as many definitions as individuals surveyed, defining quality continues to be a perennial problem. Institutional researchers and other administrators have been called upon for years to produce student/faculty ratios, costs per unit, faculty publications lists, number of library volumes, and a whole host of supposed quality indicators to be used for academic validation. However, there has been little evidence produced that proves that a positive report of any of these indicators means quality.

President Joe Saupe's address to the Ninth AIR Forum in 1969 focused on the problems of assessing program quality. He cited the purposes of quality assessment as: development of new programs, evaluation of existing programs,

guidelines for budget support, and cost-benefit analysis. While these purposes are noble and scholarly, the authors contend that another important reason for establishing institutional or programmatic quality is for marketing the institution externally. Because of the competitiveness in higher education today, there is a great need to develop a perception of quality for external constituencies. With a more consumer-oriented student population, it has become necessary that institutions prove their economic worth. Riesman (1958, p. 5) contended that institutional quality changes much faster than its clientele realizes. Therefore there is a time lag for institutions who develop a novel or more demanding program in attracting high calibre students. Likewise, declining institutions continue to attract students because of a reputation that has long been tarnished.

Today's increasing emphasis on "marketing" quality in higher education requires both the full range of significant measure of quality and the public perception that quality exists. This discussion will focus on three obvious measurable indicators of quality in higher educational institutions: students, faculty, and library. This discussion also focuses on the integral role that institutional researchers can play in assisting their institution in developing criteria for evaluating these indicators.

In response to the necessity to market quality, institutional research needs to be both active and reactive. It is clear from current research that a few institutions continue to be perceived and to rank as the best in higher education. Most institutions in the current financial environment find it very difficult to compete with such established rankings. These institutions need to develop their own distinctiveness or quality criteria given their specific institutional mission. Institutional researchers can

be valuable in that process. Traditional standards for measures for determining quality have been defined over time in such a way that few schools can meet them. Although those remain important marks of excellence, there are different criteria that can demonstrate normal rather than extraordinary quality.

Historical Context

Reputational studies have been conducted in higher education for over 50 years. Hughes conducted the pioneer study of graduate programs in 1924 when only 65 American universities offered the doctoral degree (Lawrence and Green, 1980, p. 4). Since that time a number of studies have been conducted. A 1957 study by Hayward Keniston for the University of Pennsylvania ranked 24 graduate programs at 25 institutions. One of the best known was done in 1966 by Allan Cartter and was sponsored by the American Council on Education. This study and its replication in 1970 by Kenneth Roose and Charles Anderson ranked graduate programs using peer raters. These studies received a great deal of comment both negative and positive. Most importantly, however, they opened up a new era of quality studies in higher education.

Perhaps the primary criticisms of these studies were the subjective nature of peer review and the difficulty of measuring a complex system on one or two variables (Lawrence and Green, 1980, p. 3). The four studies of significance through 1970: Hughes (1925), Keniston (1959), Cartter (1966), and Roose-Andersen (1970) revealed very similar results.

Since 1970 there have been many attempts to assess quality and to rank institutions using numerous criteria. A goal for all such studies appears to be objective assessment. Doctoral programs, master's programs, professional programs, and undergraduate programs have all come under the

scrutiny of quality assessment. Such organizations as the Council of Graduate Schools and Educational Testing Services (1976), Conference Board of Associated Research Councils (1978), National Science Foundation and Russell Sage Foundation (Blau and Margulies, 1974-75), and the Regents of the University of California have sponsored ranking studies. These have furthered the understanding of criteria but have not been overly convincing in their methodology or results. What has emerged are some criteria that institutions can investigate when measuring quality for themselves. It is evident that institutions must have some answers available for their many constituencies on how well they are providing education. These criteria are the first step. However Cartter (1966) emphasized that no single factor or combination of factors is really sufficient to measure institutional quality. While such measures as publication record of faculty and faculty awards appear objective, Cartter contended that they may be only subjective measures once removed because awards, faculty salaries, and acceptance of journal articles are determined by subjective appraisal. He goes one step further and says that even library holdings are invalid unless the collection is qualitatively judged with the development and application of appropriate criteria.

Establishment of Quality Criteria

Rankings of educational institutions have historically been favorable to private, well-endowed institutions which offer doctoral programs. They tend to be located in the Northeast but also the Midwest and Far West. In a study done by Astin and Soloman in 1979, they found that the most selective institutions were privately controlled and have residential undergraduate programs. Using average entrance test scores and National Merit Scholar

choices the Astin and Soloman study ranked the 25 highest ranking institutions by degree of selectivity of entering students. The absence of any public institution from the list was attributed to the use of average scores. According to Astin and Soloman (1979, p. 49) there are significant numbers of gifted students in public institutions. However, the low end of the ability distribution is almost always larger at the more widely accessible public institutions. Scores and thus selectivity in public higher education are inevitably lower.

Given these findings, institutions that are public by mandate or whose students do not place in the top percentiles are in the position of defining their own quality in some additional ways.

The authors have identified three areas of quality assessment: students, faculty, and library resources, to be studied.

Students. In quality assessment studies done in recent years, the primary emphasis is on the qualifications of entering students. As Astin and Soloman (1979, p. 49) observe, this approach limits public institutions with less rigid admissions standards. Because of this built-in bias, it is important that public institutions as well as private schools which do not fall in top categories establish ways of measuring student achievement using other criteria. The following list describes types of student data that could and should be collected by institutional researchers:

(1) Entrance Test Scores -- While averages of the total freshman class may not compare favorably with those of more prestigious schools, most institutions do attract large numbers of very bright students. This should be displayed number in certain percentiles, comparison to national average, or simply the number of freshmen scoring over a certain grade

on the entrance exam. This should be emphasized along with any National Merit winners or finalists. For community colleges, high school grades may be a point of emphasis although this is often time seen as results of grade inflation.

(2) Retention Rate -- It is important for parents and potential students to have knowledge of how satisfied students are with the institutional environment. A high retention rate (based on some established standard) could be a very important indicator of student satisfaction.

(3) Student Outcomes -- Although difficult to measure, graduates' attitudes about the institution as well as employment or graduate school decisions are important. Such common statistics as number of students who obtain jobs or enter post-degree education should be collected. More important, however, are acceptance rates to graduate and professional schools. These can be important factors for entering freshmen, as well as external agencies.

(4) Location and Recruitment of Graduates -- In state-supported institutions particularly, location of graduates in certain fields can be very important to legislators and others. Students being placed in the state and in prestigious firms are positive indicators.

(5) Results of Licensing Examinations -- In institutions with professional programs, it is particularly important to know how well students do on post-graduate licensing examinations. These data are usually available through the licensing board

and can be an indicator of program effectivensss relative to other institutions.

(6) Scholarship Recipients -- Awards for outstanding achievement should be determined. In addition to the National Merit Scholarships, students are awarded a number of non-institutional scholarships. Such sources as R.O.T.C., employers of parents, and foundations give scholarships to students with no prescribed institution. These should be recorded.

(7) Student Activities and National Recognition. It is important to highlight the leadership abilities of both entering and currently enrolled students. For entering students, such factors as number in National Honor Society, student government officers, etc. could be used to show calibre of students. Likewise, national recognition of currently enrolled students should be identified. National summer fellowships, awards, etc. are indicators of student quality.

These seven sources of data are in addition to demographic characteristics usually collected. Some of these data are collected throughout campuses, perhaps haphazardly. Institutional research could do a great service by building a student quality profile. These measures do not take the place of the input data usually collected; rather, they clearly make the point that quality and distinctiveness can be measured in many ways.

Faculty. Traditionally data on faculty have focused on scholarly productivity as an indicator of quality. However, Somit and Tanenhaus (1964) contended that the relatively poor publication and scholarship records of faculty at lower ranked institutions may reflect heavier teaching loads,

inaccessibility to adequate library resources, or the lack of emphasis on research by the institution. They argued that these factors do not mean that these faculty members are deficient in skills to train students in research and scholarship or that the institutions themselves are not adequately fulfilling their missions in teaching and public service. Also, according to Lewis (1968), publication productivity may be causally related to the prestige of the faculty member's institution or the exposure of the institution's name in journals may give it unwarranted prestige.

Perhaps the least contaminated measurement of faculty scholarship is the citation count. Smith and Fiedler (1971) contended that the number of times a scholar's work is cited by other scholars is indicative of some degree of quality. Although they were quick to add that there are flaws to this approach as well. In some cases significant research may not be recognized for some years; in other cases the research may become so well known it is not cited by name.

In promoting the quality of an institution there are factors to consider beyond scholarly activity.

1. Faculty Awards of Fellowships. Faculty at small institutions often are the recipients of national fellowships for summer research or outstanding contributions. These could be important in a faculty profile.
2. Number of Faculty with Advanced Degrees. This is a very basic piece of demographic data that should be kept by all institutions. Not only is it required for most accreditation studies, it is important in showing the depth of a faculty. Potential students may be interested in knowing the number of faculty with earned doctorates in their field of interest.

3. Years of Teaching Experience. This is a particularly good indicator for more established institutions. The experience of faculty members is important to promote.

4. Full-Time Faculty. There is a growing bias by students on the use of adjunct faculty or graduate teaching assistants for regular classroom teaching. A good quality indicator could be the percentage of courses taught by full-time regular faculty.

5. Scholarly Activity. While this criteria should be addressed, it should include presentations at national meetings, and grant and contract awards in addition to publication records. Also, faculty service in the community or in national publications should be recorded.

6. Accomplishments of Students. Accomplishments of students in particular disciplines should be noted as evidence of outstanding faculty performance. Student accomplishments in the fine arts is particularly appropriate for this category.

7. Student Evaluations. Student evaluations of faculty may have some value if summarized in meaningful ways. These could provide an idea of student attitudes toward the faculty.

While these are very basic kinds of criteria, they are usually not kept by institutional researchers. However, faculty provide an essential key to institutional quality.

Library Holdings. Library resources are one of the most widely used criteria for quality assessment. However, both the studies by Allan Cartter (1966) and Blackburn and Lingenfelter (1973) were critical of assessments that just count the number of volumes (Lawrence and Green, 1980, p. 29).

This narrow measure does not address appropriateness of collection, current resources spent on the collection, computer capabilities, etc.

Normally, institutional researchers have not collected library statistics except for national reports nor have they participated in the application of nationally accepted formulas. The authors contend that the assistance of institutional research practitioners in this new role of assisting in the assessment of the quality of library resources could provide an unbiased view for internal and external purposes.

Libraries already have in place a number of standards and formulas for assessing the quality of the library. The major library standards used today focus on quantitative, mathematically-driven formulas. These standards, like many others, are designed to establish minimum levels of collection, staffing, budget, and space; although in actuality they tend to result in number which are difficult to support with library budgets in many institutions. As higher education professionals, we must continue to adhere to these nationally accepted standards in order to build these measures of excellence into our planning and budget requests.

Though some of these standards do suffer from the "number syndrome", they are the first stage of the qualitative assessment. However, the best example of using both quantitative and qualitative measures is in the area of collection development or enhancement. This area of library assessment is the most visable in a public sense.

In 1975, the Standards for College Libraries were adopted by the American Library Association and its division, the Association of College and Research Libraries (ACRL). These standards provide not only for the evaluation of collection adequacy, but also for staff and facility assessment as well:

1. Collection adequacy. This formula is based upon the number of programs, level of programs, etc. It includes the first clear standard for microforms and for calculating the size of the collection.
2. Physical facility. The application of these formulas result in an estimate of the space required for the collection, students, faculty, and staff.
3. Staff adequacy. This formula provides an estimate of staff members required to serve certain sizes of student bodies.

At the same time, ACRL included a formula for calculating the appropriate number of library faculty. These standards are intended primarily to assess adequacy of libraries supporting baccalaurate and master's programs, but they may be applied to libraries serving universities which grant fewer than ten doctoral degrees annually. The standards to not recognize the increased collection requirements for comprehensive doctoral degree granting universities. Thus, the application of the formula understates collection size requirements for such institutions.

Prior to the work done by ACRL, the Clapp-Jordan formula for minimal collection adequacy was first used in 1965. It was clear from the first applications of this formula that there was a correlation between the degree of collection adequacy and the academic quality of an institution. Nevertheless, the standards applied by the Clapp-Jordan formula were eroded gradually by the much talked about information explosion and the concomitant increase in the need for library support of the curricula. The ACRL formulas have gradually replaced, or at least supplemented, Clapp-Jordan.

Other collection standards are designed to identify an appropriate rate of current acquisitions in support of programs and research at comprehensive

doctoral granting institutions. The formula provides an adjustment factor for reducing the base rate of acquisitions for institutions with fewer than the formula equivalent number of doctoral offerings. Adjustments to the annual acquisition rate are also made in consideration of first professional degree programs.

Interpretation of Formula Standards in Measuring Library Quality

The search for standards has produced in the past quarter of a century increasingly sophisticated measures and reliable results. While the Clapp-Jordan formula is a time honored instrument, it is no longer capable of assessing the adequacy of collections. Currently, the ACRL formula remains the best available instrument for this task. Formulas indicate minimal sizes for collections, staffing, space and so forth. There is always a danger that the minimal standards established by the formulas will be interpreted as optimal levels by those controlling funding of libraries. Second, standards established by the formulas are not only minimal, but also are applicable only to the threshold period of an institution's growth. They are to be viewed as the "bread and water" level of adequacy of a collection in a well-established institution. As acquisition rates decline, for example, collections begin to stagnate. Even schools with collections which are adequate in sheer numbers may have holdings which are valuable only for historical research. A library with insufficient current acquisitions and inadequate retrospective collections can support neither the teaching/learning process nor the current research and publication of its academic community.

Qualitative Standards in Measuring Library Resources

There are a variety of standards and formulas available for assessing the ability of an academic library to support the teaching and research programs of the institution. These usually deal with the totality of a library's information resources, rather than with specific subject areas and any differences between information needs at the masters or doctoral levels. In addition, discipline-specific standards developed by professional societies or accrediting agencies may be too ambiguous to be useful, inappropriate for the particular focus of an institution's program, or may make use of data on enrollment and faculty size that are only tangential to defining the kind and level of library collection needed to support graduate programs in the area. In order to better assess the breadth and depth of collection requirements, therefore, it is essential that librarians, teaching faculty, and researchers, and others share involvement in the quality assessment and level of collections.

Research libraries have begun to develop a process-oriented approach which can be applied to a multiplicity of disciplines which may be evolving and changing, and which involve librarians, teaching faculty, researchers and students in the collection assessment. Here, through discussions and questionnaires and other data-gathering devices, a profile of the collection by subject, department, curriculum base and so forth can be established:

1. Faculty members and graduate students are questioned as to their research and teaching interests.
2. Programmatic information and collection parameters are defined by the faculty in conjunction with the librarians.
3. The collection is reviewed and compared to the collection needs conspecti already prepared and to the known body of

available books, journals and so forth. Numerous techniques are available to make assessments of collections in specific subject areas, including the use of authoritative subject bibliographies, list checking using selected authoritative monographs and articles, the use of citation studies and evaluations by subject specialists.

4. Collection development policies and guidelines are prepared and implemented.

Institutional research can bring to the first phase of library resources assessment an unbiased professional approach to the application of formulaic standards. Not only can they assist in data gathering, but they can objectively review the results of internal evaulation. Other aspects of the qualitative assessment can be based somewhat on information normally found in institutional research offices such as HEGIS reports, comparative studies, etc.

Conclusion

While these criteria are just three of a number that could be used, they are very basic to the academic program of all types of institutions. Current quality studies concentrate on the inputs to the educational system often to the detriment of the outcomes to the system. Rarely are institutions recognized for the accomplishments they make with underprepared students. Conversely, the success stories are about those gifted students that complete degrees in prestigious institutions.

It is therefore the responsibility of institutions to identify areas of distinction themselves. There are very few institutions that could surpass Harvard in prestige. However, there are a number of institutions both

public and private that are doing an outstanding job in accomplishing their educational missions.

As costs for higher education rise and as the competition for students increases, more and more demands will be placed on institutions to validate their worth. Using the common criteria of scholarly productivity, library holdings, or scores of entering students simply will not work for the majority of institutions.

Institutional research should see the assessment of institutional quality as a priority management task. IR offices must take the offensive in developing criteria and data profiles that answer the questions of both internal and external constituencies. Quality can be measured in a number of different ways. Quality narrowly defined is often perpetuated by alumni, current students and faculty, and peer groups. Because of the difficulty in measuring quality, it is difficult to establish one benchmark for quality. Therefore quality becomes a perception in some cases rather than reality. Riesman (1958, p. 5) observes that reputation for quality can carry institutions long after the quality fades. Therefore institutions must be aggressive in determining quality criteria themselves. Because once institutions have established quality, they often get to keep it!

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